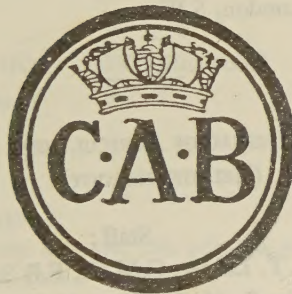


HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1948



**COMMONWEALTH BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)**

Winches Farm Drive, Hatfield Road,
St. Albans, England.

December, 1948

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HELMINTHOLOGICAL ABSTRACTS *incorporating* BIBLIOGRAPHY OF HELMINTHOLOGY

Abstracts in the present number are by

W. Alves
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COMMONWEALTH AGRICULTURAL BUREAUX

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By *J. Tweeddale Edwards, M.R.C.V.S. and The Imperial Bureau of
Agricultural Parasitology (Helminthology)*

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HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1948

Vol. 17, Part I

1—Acta Veterinaria Hungarica.

- a. KOTLÁN, A., 1948.—“Studies on the life-history and pathological significance of *Oesophagostomum* spp. of the domestic pig.” 1 (1), 14-30. [In English.]

(1a) Kotlán, from experimental infections of pigs with infective larvae of *Oesophagostomum dentatum*, shows that its course of post-embryonic development is very similar to that of *O. columbianum*. This may be divided into two stages. In the first stage the larva enters the epithelial layers of the intestinal mucosa where the third moult occurs and the larva returns to the lumen. This moult takes place at the earliest on the 4th day after infection. In the second stage the fourth moult is completed in the intestine usually between the 20th and 30th days after infection, and the females become mature and deposit eggs 49 days after infection. The nodules formed in the intestinal mucosa vary in shape, size and structure according to their age and are most conspicuous after the larvae have returned to the intestine. In many of the larvae the third moult is delayed or not reached and they fail to return to the intestinal lumen.

R.T.L.

2—Advisory Leaflet. Ministry of Agriculture and Fisheries. London.

- a. ANON., 1948.—“Root-knot eelworm in glasshouses.” No. 307, 4 pp. [Revision of 1941 Leaflet.]

3—Agricultural Gazette of New South Wales.

- a. ANON., 1948.—“New plant diseases.” 59 (1), 35-36, 46.
b. ANON., 1948.—“Diseases of daffodils.” 59 (2), 83-86.
c. MACPHERSON, O. M., 1948.—“Sodium fluoride for the treatment of round worms in pigs.” 59 (2), 92.

(3a) Amongst a number of plant diseases reported for the first time from New South Wales are the following caused by parasitic nematodes: “bloat” of onion (*Allium cepa*) due to *Anguillulina dipsaci*, and root-knot caused by *Heterodera marioni* on *Citrus limonia* (lemon), *Ipomoea batatas* (sweet-potato) and *Physalis peruviana* (cape gooseberry).

T.G.

(3b) Three important diseases affecting daffodils in New South Wales are dealt with in this popular article, one being the nematode disease caused by the stem eelworm, *Anguillulina dipsaci*. Symptoms, as shown in the bulb and the foliage, are described and methods of control by warm-water treatment are given.

T.G.

(3c) Observations extending over three years have shown that sodium fluoride will remove from pigs over 90% of mature and immature *Ascaris lumbricoides*. It has a high efficiency against *Ascarops strongylina* and has a variable effect on the nodule worm, the thorny-headed worm and the whipworm of pigs.

R.T.L.

4—Agricultural Institute Review. Ottawa.

- a. SWALES, W. E., 1948.—“Diseases and parasites.” 3 (2), 103-105.

(4a) In the region of Quebec north of New Hampshire, in the eastern counties of Nova Scotia and in the western region of Ontario, where there is cobalt deficiency, sheep are highly

susceptible to parasitic and pining diseases. In eastern Canada 90% of the sheep losses are attributed to haemonchosis, nodular disease and black scours, and phenothiazine is essential for control. The problem of helminth parasites is much less in Saskatchewan, Alberta and the interior of British Columbia, except in low spring pastures and irrigated areas. In the coastal area of British Columbia the number of sheep is small. In range flocks a pre-pasture dose of even 15 gm. of phenothiazine is highly effective and self-treatment with phenothiazine-salt lick or drenches of copper sulphate and nicotine may suffice.

R.T.L.

5—American Journal of Hygiene.

- a. WRIGHT, W. H., BAUMAN, P. M. & FRY, N., 1948.—“The control of schistosomiasis japonica. VI. Studies on the chemical impregnation of uniform cloth as a protection against schistosomiasis japonica.” 47 (1), 33-43.
- b. WRIGHT, W. H., BAUMAN, P. M. & FRY, N., 1948.—“The control of schistosomiasis japonica. VII. Studies on the value of repellents and repellent ointments as a protection against schistosomiasis japonica.” 47 (1), 44-52.
- c. McMULLEN, D. B. & BRACKETT, S., 1948.—“Studies on schistosome dermatitis. X. Distribution and epidemiology in Michigan.” 47 (3), 259-270.
- d. SADUN, E. H., 1948.—“Resistance induced in chickens by infections with the nematode, *Ascaridia galli*.” 47 (3), 282-289.

(5a) Tests were carried out *in vitro* and *in vivo* with 31 compounds to determine the value of impregnated clothing as a protective against infection with *Schistosoma japonicum*. Various types of uniform cloth were employed and over 500 animals were used in the tests. The most effective compound proved to be an emulsion of 4.5% benzyl benzoate with 0.5% “Tween 80” in water, which gave protection in cotton trouser cloth through four washings. Impregnation of cloth with water-repellent compounds gave good results but the protective action was gradually lost when the cloth was washed.

J.J.C.B.

(5b) The value of liquid repellents and repellent ointments against schistosome infection was tested on mice exposed to infection through the tail for 45 minutes with cercariae of *Schistosoma mansoni* or *S. japonicum*. Ointment tests comprised 46 experiments with 20 compounds or combinations of compounds with ointment bases, using a total of 348 mice. All ointments employing dimethyl phthalate, dibutyl phthalate, benzyl benzoate, Rutgers 612, Indalone, or 2-phenylcyclohexanol, either singly or in combination in various types of bases, gave protection to the experimental animals. Two of the ointment bases by themselves failed to give protection, indicating that the action of the repellent ointments was probably not of a mechanical nature. Additional tests both with the successful liquid and ointment repellents are required to determine the length of time for which they will remain active under various conditions of exposure.

J.J.C.B.

(5c) McMullen & Brackett continued in 1941 their 1938-39 investigations on schistosome dermatitis in the State of Michigan, and the present paper analyses the data collected during the whole period 1938-41. On 130 beaches out of 510 on 127 lakes the snails were found to be infected. The most important molluscan vector was *Stagnicola emarginata*; in a few areas *Physa* spp. were implicated and in a few lakes *Limnaea stagnalis* was suspected. The ratio of infection in these three genera was 39 : 3 : 1. The northern part of the Lower Peninsula and the eastern part of the Upper Peninsula were the chief areas of infection and this corresponded with the relative density of *S. emarginata*. The other molluscs were apparently the cause of the sporadic cases elsewhere in the state.

R.T.L.

(5d) A primary infestation of *Ascaridia galli* was found to induce the development of a high degree of resistance to later infestations. This persisted when the second or test infestation was not given until two months after the first, and it was strong enough to enable a chicken to survive what would otherwise be a lethal dose. In chickens repeatedly infected with large numbers of eggs, the worms of the test infection were completely eliminated before most of them came in contact with the fluids of the host.

P.A.C.

6—American Journal of Tropical Medicine.

- a. GIGLIOLI, G., 1948.—“The transmission of *Wuchereria bancrofti* by *Anopheles darlingi* in the American tropics.” 28 (1), 71–85.
- b. SCHUBERT, M., 1948.—“Conditions for drug testing in experimental schistosomiasis *mansoni* in mice.” 28 (1), 121–136.
- c. SCHUBERT, M., 1948.—“Screening of drugs in experimental schistosomiasis *mansoni* in mice.” 28 (1), 137–156.
- d. SCHUBERT, M., 1948.—“Effect of drugs during earliest stages of experimental schistosomiasis *mansoni* in mice.” 28 (1), 157–162.
- e. CAWSTON, F. G., 1948.—[Correspondence.] 28 (1), 173.
- f. FAUST, E. C., 1948.—“An inquiry into the ectopic lesions in schistosomiasis.” 28 (2), 175–199.
- g. WALLACE, F. G., MOONEY, R. D. & SANDERS, A., 1948.—“*Strongyloides fülleborni* infection in man.” 28 (2), 299–302.

(6a) Giglioli investigated the relative roles of *Culex fatigans*, *Anopheles darlingi* and *Aedes aegypti* in the transmission of *Wuchereria bancrofti* on the coastland of British Guiana. From experimental and field data *Anopheles darlingi* was shown to be as good a vector, possibly better, than *C. fatigans*, while *Aedes aegypti* was confirmed as having a negative role in transmission. In assessing the efficiency of the mosquitoes as vectors, not only their infectibility and natural infection rate were considered, but also other factors such as relative abundance, feeding habits, powers of flight and longevity. The specific anthropophilic feeding habits of *Anopheles darlingi*, which render it such an effective malaria carrier in equatorial America, also make this species a very dangerous vector of filariasis. J.J.C.B.

(6b) Schubert investigated the most favourable conditions to adopt in setting up a reproducible and objective procedure for testing drugs against *Schistosoma mansoni* in white mice, which had been found experimentally to be the optimum species and host for this purpose. Detailed descriptions and discussions are given of the following criteria which are involved in the investigation: (i) the method of infecting the host; (ii) the optimum parasite load; (iii) the reproducibility of the density of the infection; (iv) the age of the infection for beginning treatment; (v) the dosage route and schedule; (vi) the criteria of therapeutic effect; (vii) the distinction of cures from conditions which will later relapse. The results of treating infected mice with sodium antimony tartrate and fouadin are described. It was noted that these drugs had the effect of driving adult worms from the mesenteric veins into the liver. J.J.C.B.

(6c) Under conditions described in a previous paper [see preceding abstract], Schubert tested over 400 compounds against *Schistosoma mansoni* in mice. These are grouped in four categories according to their effectiveness, namely: (i) drugs that cured most of the mice; (ii) drugs that lightened the parasite load; (iii) drugs of slight or doubtful permanent value; (iv) drugs that produced no observable effect at all. Only three drugs, all antimonials, qualified for group (i). In group (ii) were fouadin, four other trivalent antimonials, two pentavalent antimonials, a mercury compound, emetine and miracil. In group (iii) were sodium antimony tartrate and fourteen other antimonials. It is commented that the results are somewhat at variance with current beliefs as to the chemotherapeutic value of antimony compounds, inasmuch as the more effective antimonials of groups (i) and (ii) are trivalent with the structure $Sb(SR)_3$ and are oil-soluble compounds. J.J.C.B.

(6d) Schubert tested 80 drugs against the early stages of schistosomiasis *mansoni* in mice which had been experimentally infected. The drugs were administered during the five days following the exposure of the mice to the infection. Seven of the drugs, all antimony compounds, had significant effects. Emetine, miracil and gentian violet had no effect. The results on the whole resembled those obtained when similar drugs were used against mature infections. J.J.C.B.

(6e) Cawston doubts if treatment with massive doses of tartar emetic is a safe and sure remedy for schistosomiasis *japonica*, as the liver substance is too impaired to stand more than carefully regulated and filtered doses. R.T.L.

(6f) Faust has tabulated from published and other records 82 cases of ectopic schistosomiasis. The lesions are produced by immature or mature schistosomes outside the portal-caval venous blood channels with their extension into the pulmonary arterioles. The tissue reaction to schistosome eggs which have escaped into perivascular tissues is an acute inflammatory one which eventually results in pseudotubercles. These aggregate to form granulomata varying from the size of a pinhead to that of an orange. There is no evidence of local tissue reaction to the presence of the schistosome worms. The various theories which have been offered to explain these ectopic lesions are discussed. The author favours the view that "the vertebral venous system provides a natural valveless intercommunicating channel from portal and caval veins to all parts of the body, without need of embolic filtration of eggs or the migration of adult worms against blood flow or valves". R.T.L.

(6g) Wallace et al. record a case of human infection with *Strongyloides fülleborni*, possibly contracted on Leyte Island from the local monkeys, *Macaca irus*. Embryonated eggs measuring 0.046–0.051 mm. by 0.035–0.039 mm. were found in every stool examination over a period of five weeks. Larvae were rarely seen. The infection was identified by culturing to the free-living adult phase in which the characteristic females were found. Exposure of young rats to the infection proved negative. [The statement that this is the first report of a natural infection of man with *S. fülleborni* is incorrect, since Blackie in 1932 recorded several such cases in Southern Rhodesia—for abstract see Helm. Abs., 1, No. 19a.] J.J.C.B.

7—American Journal of Veterinary Research.

- a. MAYHEW, R. L., 1948.—"Studies on bovine gastrointestinal parasites. X. The effects of nodular worm (*Oesophagostomum radiatum*) on calves during the prepatent period." 9 (30), 30–34.
- b. MAYHEW, R. L., 1948.—"Studies on bovine gastrointestinal parasites. XI. The life cycle of the hookworm (*Bunostomum phlebotomum*) in the calf." 9 (30), 35–39.
- c. SEGHETTI, L., 1948.—"The effect of environment on the survival of the free-living stages of *Trichostrongylus colubriformis* and other nematode parasites of range sheep in southeastern Montana." 9 (30), 52–60.
- d. GERICHTER, C. B., 1948.—"Observations on the life history of lung nematodes using snails as intermediate hosts." 9 (30), 109–112.

(7a) Mayhew gives the clinical and post-mortem manifestations of worm-free calves experimentally infected with *Oesophagostomum radiatum*. Prepatent symptoms were diminished appetite as early as 2–5 days after infection, diarrhoea at the 7th to 17th day after infection lasting as long as 19 days, then intermittent diarrhoea, with associated weight loss, severe emaciation and weakness. Improvement was associated with the start of egg production. He suggests that treatment would have an indirectly beneficial result in reducing the numbers of larvae available to cause re-infection, rather than any immediate benefit to the treated calves, as improvement occurs naturally with the appearance of eggs in the faeces. Serial sections from parts of the small intestine showed that the last fifteen feet contained the greatest numbers of larvae. J.W.G.L.

(7b) In worm-free calves experimentally infected by the skin and orally with *Bunostomum phlebotomum*, diarrhoea commenced on the 27th to 38th day after infection and lasted 10–22 days, followed in one case by intermittent diarrhoea lasting 28 days. Eggs were found in the faeces as early as the 57th day. All the symptoms occurred previous to egg laying and were followed by a general improvement. Larvae were recovered from the lungs of two calves infected via the skin. J.W.G.L.

(7c) By pasturing worm-free lambs at Albion, Montana from June 1945 to August 1946, Seghetti showed that gastro-intestinal nematode infections in range lambs were acquired principally during May and June when the heaviest rainfall generally occurred, and that the range became practically free from larvae of *Haemonchus* and *Trichostrongylus* after mid-July. During the latter part of the summer, ten days' exposure on the range was lethal to the majority of the pre-infective stages, and during early winter no development to the infective stage occurred with *Haemonchus*, *Ostertagia* or *Trichostrongylus*. J.W.G.L.

(7d) Gerichter found in Palestine that artificial infection of snails with metastrongylid larvae took place just as readily in resting snails as in fully active snails, that multiple infections had no effect on the development of individual species, and that massive doses did not appear to harm the snail host. The life of the intermediate stage appeared to be limited only by the life of the snail host: *Helicella vestalis joppensis* harboured infective larvae of *Aelurostrongylus abstrusus* seventeen months after experimental infection. J.W.G.L.

8—Annales de Parasitologie Humaine et Comparée.

- a. DOLLFUS, R. P., 1948.—“Coenurose de la cavité abdominale chez un écureuil (*Sciurus vulgaris* L.) à Richelieu (Indre-et-Loire).” (1947), 22 (3/4), 143–147.
- b. GALLIARD, H., 1948.—“La filariose du chien à *Dirofilaria immitis* Leidy. Périodicité. Action des facteurs physiques, en particulier des rayons X.” (1947), 22 (3/4), 148–157.
- c. GALLIARD, H. & NGU, D.-V., 1948.—“Recherches sur la filariose. Choix d’une technique de numération des microfilaries du sang.” (1947), 22 (3/4), 158–163.
- d. DESPORTES, C., 1948.—“Une nouvelle espèce de *Synhimantus* parasite des rapaces.” (1947), 22 (3/4), 164–168.
- e. DOLLFUS, R. P. & CARAYON, J., 1948.—“Larve de cestode chez un hémiptère hétéroptère.” (1947), 22 (3/4), 276.
- f. DOLLFUS, R. P., 1948.—“Amoenitates helminthologicae.—VI. *Raillietina* (R.) *kouridovalli* R.-Ph. Dollfus et *Inermicapsifer cubensis* (P. Kouri) P. Kouri.” (1947), 22 (3/4), 277–278.
- g. DOLLFUS, R. P., 1948.—“Distome hémiuride (sous-famille Prosorchiinae S. Yamaguti 1934) chez un poisson du genre *Centrolophus* à Concarneau (Finistère).” (1947), 22 (5/6), 314–318.
- h. DOLLFUS, R. P., 1948.—“Sur *Monascus filiformis* (Rudolphi 1819) A. Looss 1907, trématode de l’intestin de *Cepola rubescens* (L.) en Méditerranée.” (1947), 22 (5/6), 319–323.
- i. DOLLFUS, R. P., 1948.—“Sur quelques trématodes intestinaux de *Box salpa* (L. 1758) [poisson téléostéen] de la Méditerranée.” (1947), 22 (5/6), 324–331.
- j. GALLIARD, H., HUARD, P. & NGU, D.-V., 1948.—“Recherches sur la filariose à *Wuchereria bancrofti*. Effets de l’intervention chirurgicale et de l’extirpation des filaires sur le rythme de la périodicité et sur la persistance des microfilaries.” (1947), 22 (5/6), 332–344.

(8a) Dollfus describes what is considered to be the first authentic case of *Coenurus serialis* occurring naturally in a squirrel (*Sciurus vulgaris* L.). About 300 coenuri were found in the abdominal cavity. Their scolices were immature and devoid of suckers and hooks. H.C.

(8b) Galliard records that the incidence of *Dirofilaria immitis* in dogs in the vicinity of Hanoi varies in different localities, and that this variability appears to be unrelated to seasons. There is a distinct microfilarial periodicity in which the numbers of microfilariae remain very constant from day to day. A progressive and rapid decrease in the number of microfilariae was brought about by X-ray treatment applied to the cardiac region, and reached its lowest point in three months. Similar treatment with infra-red rays caused a temporary decrease in the microfilarial count. Raising the external temperature brought about a significant increase which returned to normal after a few days. The ray treatment did not seem to affect the physiology of the adult worms, nor of the microfilariae which developed normally in insect vectors. J.J.C.B.

(8c) Galliard & Ngu endeavoured to find the best procedure to adopt in making microfilarial counts in blood. They established the following points: (i) the site from which the blood is taken, e.g. the finger or ear, is immaterial; (ii) peripheral blood is slightly richer in microfilariae than is blood taken intravenously; (iii) microfilarial counts in a large volume of blood are no more accurate than in a small quantity; (iv) microfilarial counts of haemolysed blood in a moist chamber gave better results than with stained thick films. J.J.C.B.

(8d) *Synhimantus robertdollfusi* n.sp. from *Buteo buteo* and *Tinnunculus tinnunculus* is described and illustrated. It is differentiated from *S. laticeps* by the presence of rounded dorsal and ventral protuberances between the cordons. R.T.L.

(8e) Dollfus & Carayon report the occurrence in the body cavity of a male bug, *Scolopos- thetus pictus*, of three specimens of a larval cyclophyllidean cestode showing four normal suckers and an apical sucker. Nothing is known of the adult, but attention is drawn to the fact that a bug can act as intermediate host in a cestode life-cycle. H.C.

(8f) Dollfus exposes and seeks to clarify some confusion brought about by the fact that Kouri, in a series of communications, has considered as belonging to the one species *Inermicapsifer cubensis*, worms which appear actually to belong to two species, *I. cubensis* and *Raillietina* (R.) *kouridovalei*. Dollfus identifies as a *Raillietina* sp. a specimen with a mutilated scolex which was sent to him by Kouri, who regarded it as an *Inermicapsifer* sp. H.C.

(8g) Dollfus describes and illustrates an immature adult hemiurid of which twelve specimens were found in the body cavity of *Centrolophus niger*. As it does not conform entirely with the characters of the genus *Prosorchis* Yamaguti, 1934, he places it in a new subgenus as *Prosorchis* (*Prosorchioipsis*) *legendrei* n.subg., n.sp. R.T.L.

(8h) Dollfus redescribes *Monascus filiformis* from a large number of specimens collected from *Cepola rubescens* at Castiglione, and discusses the previous work of Looss and Odhner on this species. R.T.L.

(8i) Dollfus gives a key and figures for the five species of "*Monostomum*" which have been reported from the intestine of *Box salpa*, viz., *Wardula capitellata*, *Centroderma spinosissimum*, *C. stossichianum*, *Mesometra brachycoelia* and *M. orbicularis*. He creates also two new varieties, viz., *Mesometra brachycoelia* var. *minimispinis* n.var. and *M. orbicularis* var. *minutaculeata* n.var. R.T.L.

(8j) From studies on the effects of different factors on filarial periodicity the authors conclude that general anaesthesia has no action, and that alteration of the hours of waking and sleeping does not affect the rhythm of periodicity. Surgical operations and their sequelae may induce important modifications of rhythm, especially in those cases in which living adult filariae have been recovered from excised tissue: the total number of microfilariae in 24 hours may be quickly and considerably reduced but there is a more or less rapid return to pre-operation levels. In two cases in which five and six filariae were removed, this occurred from the 9th and 16th days respectively after operation. R.T.L.

9—Annals of Tropical Medicine and Parasitology.

- a. BLAIR, D. M. & ROSS, W. F., 1948.—"Observations on the use of cercarial antigen in the diagnosis of schistosomiasis." 42 (1), 46–51.

(9a) Blair & Ross discuss the use by American workers of an antigen prepared from cercariae of *Schistosoma mansoni*. The antigen described in this paper was prepared from mammalian schistosome cercariae obtained from wild *Physopsis* snails, and they discuss and dismiss Cawston's objections to the use of such cercariae. They emphasize, as do the Americans, the absolute necessity for a small intradermal wheal, advocating the production of a wheal 5 mm. in diameter, and they regard doubling of the size of the wheal after 15 minutes as a positive reaction. They state that with proper technique the incidence of "doubtful" reactions is low. Comparing freshly prepared material with antigen made up some time previously they find that it keeps well in carbol-saline solution. They state finally that there is probably no need for a control injection in large-scale African surveys. A graph showing the development of a positive reaction was prepared from ciné photographs exposed at one-minute intervals. W.A.

10—Arkiv för Zoologi.

- a. ALLGÉN, C. A., 1948.—"*Pelagonema obtusicaudum* Filipjev in the Southern Hemisphere and notes on two other nematodes from the Campbell Island." (1947), 39 (3), Sect. B, No. 2, pp. 1–4.
b. ALLGÉN, C. A., 1948.—"Die Nematoden-Familie Tripyloididae, ihre Arten und Verwandtschaft." (1947), 39 (4), Sect. A, No. 15, pp. 1–35.

(10a) Allgén reports that in a collection of marine nematodes from Campbell Island, made by the Norwegian Antarctic Expedition 1923–1925, there occurred a single female specimen of *Pelagonema obtusicaudum* Filipjev which had previously been recorded only from the northern hemisphere. In a final note the author makes the two following nomenclatural changes: *Monoposthia campbelli* nom. nov. for *Monoposthia minor* Allgén, 1932 and *Rhabditis campbelli* nom. nov. for *Rhabditis australis* Allgén, 1932. T.G.

(10b) Allgén deals with the systematics of the marine nematode family Tripyloididae. He lists, and briefly describes and illustrates, the species of the genera *Bathylaimus* Cobb, *Bathylaimoides* n.g., *Parabathylaimus* de Coninck & Schuurmans Stekhoven, and *Tripyloides* de Man. One new species is described, viz., *Bathylaimus latilaimus* n.sp. T.G.

11—Australian Veterinary Journal.

- a. GORDON, H. McL., 1948.—“The epidemiology of parasitic diseases, with special reference to studies with nematode parasites of sheep.” 24 (2), 17–45.

(11a) Gordon summarizes the experimental conclusions of research workers in bacterial and virus diseases on the origins of epidemics, and gives examples of their applicability to helminth infections. The role of anthelmintics and of resistance due to age, previous infestations and nutrition are described with tabulated data. The nature of “self-cure” is discussed: observations are reported from which it is concluded that this is not related to the age of the worms or necessarily due to a sustained improvement in the nutritional level, but may be associated with an unknown “anti-helminthic” factor in rapidly growing grazing plants. There are several striking charts illustrating the influence of bioclimatic factors on the fluctuation of infections with different species in sheep in Australia. R.T.L.

12—Bacteriological Reviews.

- a. TALIAFERRO, W. H., 1948.—“The inhibition of reproduction of parasites by immune factors.” 12 (1), 1–17.

(12a) Reviewing the question of the inhibition of reproduction of animal parasites by immune factors, Taliaferro maintains that there are relatively few proven cases of antibodies inhibiting the basic rate of reproduction of parasites *in vivo*. Three types of reproductive inhibition are recognized: non-specific inhibition where immune factors reduce the entire metabolic level of the parasite including the processes involved in reproduction; non-specific inhibition fortified by physiological derangements of the host; and the specific inhibition of reproduction alone. The first type is found in worm infections (*Nippostrongylus muris*, *Trichinella spiralis*) where an antibody acting as a precipitin depresses all metabolic activities including those on which reproduction depends. According to Taliaferro more detailed studies will have to be made before ablastin can be regarded as being identical with one of the two types of protective antibodies found to be active against the larva of *Taenia taeniaeformis*. H.C.

13—Blood. The Journal of Hematology. New York.

- a. BONSDORFF, B. VON, 1948.—“Pernicious anemia caused by *Diphyllobothrium latum*, in the light of recent investigations.” 3 (1), 91–102.

(13a) In Finland, between 1941 and 1944, von Bonsdorff found 96 instances of tapeworm anaemia in about 11,000 medical cases. Cryptogenetic pernicious anaemia and worm infestation are not uncommon and may occur simultaneously in an individual, but in the former disease there is no remission after anthelmintic treatment. His experiments show that in patients with pernicious tapeworm anaemia the gastric juice contains intrinsic factor, and that lack of extrinsic factor is not an essential cause. It seems possible, however, that decreased secretion of intrinsic factor and a relative deficiency of extrinsic factor can each play a part. Moreover, the worms appear capable of preventing interaction between these two factors, and this may be the origin of the pernicious anaemia. It is shown that lack of the liver anti-anaemic factor is not a result of its destruction by the worm or its toxins. In manifest pernicious anaemia the worm is found higher up in the intestine than normally, and the author believes that the inhibition between the intrinsic and the extrinsic factors only occurs when the worm is located high up in the intestine. R.T.L.

14—Brooklyn Hospital Journal.

- a. REED, H. L., 1948.—“Intracranial cysticercosis.” 6 (1), 32-40.

(14a) Reed reports three cases of intracranial cysticercosis in Italian-born men in middle life. Two cases represent relatively acute disease of the posterior fossa, the patients having died within a year of surgical exploration. The third gave a history of progressive supratentorial disease of six years' duration; a large multicystic lesion, in which smaller cysts were to be seen within the larger ones, was removed from the parietal leptomeninges. In this case good health ensued during a seven-year follow-up period. The histological features of the cyst wall and surrounding host tissues are said to be consistent with a diagnosis of cysticercosis. H.C.

15—Bulletin de la Société de Pathologie Exotique.

- a. PICK, F., 1948.—“La mise en évidence d'un système vasculaire superficiel chez le trématode *Watsonius watsoni* (Conyngham 1904), Stiles et Goldberger 1910.” 41 (1/2), 34-35.

(15a) Pick describes and illustrates the presence of a bilaterally symmetrical superficial vascular system in *Watsonius watsoni*, revealed by vital staining with pyocyanine. R.T.L.

16—Canadian Journal of Comparative Medicine.

- a. SAVAGE, A., 1948.—“Some lessons from swine autopsies.” 12 (3), 65-68.

(16a) Of over 1,600 pig carcasses examined at the Veterinary Laboratory, Winnipeg, ascariasis was recorded as the cause of death in 88. R.T.L.

17—Canadian Journal of Research. Section D, Zoological Sciences.

- a. BASIR, M. A., 1948.—“*Chitwoodiella ovofilamenta* gen. et sp. nov., a nematode parasite of *Gryllotalpa*.” 26 (1), 4-7.
b. MILLER, R. B., 1948.—“Reduction of *Trienophorus* infestation in whitefish by depletion of the cisco population.” 26 (2), 67-72.

(17a) To the five new nematodes which he has already described from mole crickets [see Helm. Abs., 11, No. 144a], Basir now adds *Chitwoodiella ovofilamenta* n.g., n.sp. to the Thelastomatinae. The male is unknown. The female differs from known forms in the shape of its long and striated buccal cavity, in the polar filaments on the eggs and in the position of the origin of the ovaries. R.T.L.

(17b) In Canadian lakes, the plerocercoid of *Trienophorus crassus* occurs principally in tullibee but also in whitefish, and seriously interferes with the marketability of the latter. Miller reports that overfishing of tullibee in Lesser Slave Lake over the period 1940-47 has coincided with a reduction in plerocercoid infestation in whitefish from 265 per 100 fish in 1944 to 26 per 100 fish in 1947. He shows that the age of tullibee caught has changed from 80% six years old and over in 1940 to 78.5% two years old in 1947, and that the incidence of *T. crassus* plerocercoids in tullibee has fallen from about 100% to about 11% over the same period. From this and other evidence he concludes that the tullibee is the normal intermediary for *T. crassus* and is necessary for its maintenance. He advocates unrestricted fishing of tullibee for animal feeding as a means of controlling the parasite in the far more valuable whitefish. E.M.S.

18—Canadian Medical Association Journal.

- a. BARTLETT, L. C., 1948.—“Echinococcus cyst.” 58 (1), 75.

19—Cleveland Clinic Quarterly.

- a. McPHERON, W. G. & HUGHES, C. R., 1948.—“Echinococcus cyst of the liver. Report of 4 cases.” 15 (2), 92-98.

20—Comptes Rendus des Séances de la Société de Biologie. Paris.

- a. THURET, C. & THIBAUT, C., 1948.—“*Bacillus bifidus* dans la lutte contre les helminthes intestinaux de la souris.” 142 (1/2), 44-46.
- b. GALLIARD, H., 1948.—“Races géographiques de *Strongyloides stercoralis*.” 142 (1/2), 50-52.

(20a) Eggs of *Hymenolepis nana*, *H. diminuta* and *Aspicularis* sp. disappeared from the faeces of mice after three or four administrations of 1-2 c.c. of a culture of *Bacillus bifidus*. Thuret & Thibault suggest the possibility of replacing phenothiazine and other intestinal anthelmintics used in human and veterinary medicine by a method entirely innocuous to the host.

R.T.L.

(20b) Galliard quotes experimental and epidemiological evidence from the literature from which it is argued that different biological races of *Strongyloides stercoralis* exist in different parts of the world. The characteristics of these races are their infectivity for dogs and cats and their behaviour in the exogenous development, e.g. a tendency either to the direct type of development or to a mixed direct and indirect type. Experimentally he showed that the characteristics concerned with infectivity to canine hosts are inherent in the race or strain of the parasite and are not explicable on the basis of varying susceptibility of the host animals. Thus, in Indo-China, he found that the dog is easily infected with the local strain of *S. stercoralis* from man but is refractory to strains from the Antilles and Africa.

J.J.C.B.

21—Deutsche Tierärztliche Wochenschrift.

- a. SCHÖNBERG, F., 1948.—“Zur Bedeutung der Untersuchung des Zwerchfells bei Rindern für die Feststellung von *Cysticercus inermis*.” 55 (9/10), 75-76.

(21a) Schönberg recommends the examination of the diaphragm muscle after removal of the serosa in inspection of beef carcasses for cysticercosis bovis. Bartels has reported to him the detection of infection by this means in two carcasses showing no cysticerci in the masseters, heart or oesophageal muscles. At Herford in 1947, 19 of 1,200 cattle slaughtered had cysticerci, and in 1948 they have been found 5 times in 75 animals slaughtered.

E.M.S.

22—Discovery. Norwich.

- a. LAPAGE, G., 1948.—“Man against ‘worms’.” 9 (1), 24-26.

23—East African Agricultural Journal.

- a. DUTHY, B. L. & VAN SOMEREN, V. D., 1948.—“The survival of *Taenia saginata* eggs on open pasture.” 13 (3), 147-148.

(23a) Duthy & Van Someren describe experiments in Kenya which show that paddocks had to be isolated for at least a year after contamination with eggs of *Taenia saginata* before cattle could be grazed without risk of becoming infected with *Cysticercus bovis*.

R.T.L.

24—Endeavour. London.

- a. LAPAGE, G., 1948.—“Parasitic animals and the world's food.” 7 (25), 27-31.

25—Farm and Home Science. Utah Agricultural Experiment Station.

- a. THORNE, G., 1948.—“Soil fumigation. Only effective way to control nematodes, wireworms and other soil-inhabiting pests.” 9 (1), 3, 16.

(25a) Thorne gives detailed instructions for the preparation of the soil and the application of fumigants for the control of nematodes, wireworms and other soil-inhabiting pests. The article covers field-scale operations and is illustrated with photographs of fumigant-applicator attachments for ploughs and harrows.

T.G.

26—Farmers' Bulletin. U.S. Department of Agriculture.

- a. DEMAREE, J. B., 1948.—“Diseases of strawberries.” No. 1891, 28 pp. [Revised.]
 b. DOOLITTLE, S. P., 1948.—“Tomato diseases.” No. 1934, 82 pp. [Revised.]

(26a) Demaree describes the symptoms and methods of control of a number of common diseases of strawberries in the U.S.A. In addition to fungus and virus diseases he mentions three caused by parasitic nematodes, namely, spring dwarf (associated with *Aphelenchoides fragariae*), summer dwarf (*A. besseyi* Christie), and root-knot (*Heterodera marioni*). The two former occur in different parts of the country but are both spread by means of infected runners; they can only be controlled by careful inspection and roguing of the crop when the symptoms are most pronounced, in spring and summer respectively. Root-knot disease of strawberries is seldom severe unless strawberries are grown after a severely infested crop; crop rotation and selection of clean plants are recommended. M.T.F.

(26b) In this comprehensive account of the common diseases of tomatoes in the United States, short sections are contributed by Steiner on nematodes (pp. 52–55) and by Christie on chemical treatment of soil for control of nematodes (pp. 73–74). Steiner lists the nematodes which have been found attacking tomato plants, briefly describing the symptoms caused by the root-knot nematode, *Heterodera marioni*, and giving general recommendations for its control. For soil treatments against nematodes Christie recommends chloropicrin in greenhouses and small fields where a water seal can be applied to the soil after fumigation; for large areas he advises a mixture containing dichloropropylene and dichloropropane (such as D-D mixture or Dowfume N), or one containing ethylene dibromide (such as Bromofume, Dowfume W, Iscobrome D or Soilfume). General directions are given for soil fumigation. Another section in the bulletin deals with steam sterilization of the soil, which may be effective against nematodes in greenhouses. M.T.F.

27—Feuille des Naturalistes. Paris.

- a. HURLAUX, R., 1948.—“Les cellules oxydasiques de l'*Ascaris*.” 50e Année, 3 (1/2), 5–15.
 b. DOLLFUS, R. P., 1948.—“Epizoïques (animaux et végétaux) sur les copépodes parasites. Déformation pathologique d'un copépode par une algue epizoïque.” 50e Année, 3 (1/2), 23–27.

(27a) Hurlaux gives a detailed and well illustrated account of the structure and functions of the four giant cells, hitherto considered to be phagocytic, of *Parascaris equorum*. They are shown to be morphologically distinct from the excretory system and, in the case of the female, to change colour and become more active with increasing age. From the results of the experimental introduction of various foreign bodies into the body-cavity and from a histochemical study, it is concluded that these cells are not phagocytic but respiratory in function. They contain phenolases, dopa-oxidases and peroxidases. By physical, chemical and serological methods, the blood in the body fluid is shown to be that of the host. The author therefore advances the theory that the inactive oxygen carried in this blood to the giant cells is there converted into active oxygen in the presence of the oxidases. He suggests that, contrary to the classical theory, *Parascaris* could be regarded as an aerobic nematode. H.C.

(27b) Dollfus reports having seen five eggs of a monogenetic trematode attached by their polar filaments to a male *Caligus rapax*, a copepod parasite of a gadid fish (? cod or hake) from the Labadie Bank, south of Ireland. He refers to the fact that, although Scott & Scott (1913) figured a male *Caligus centrodoni* with 14 eggs of some unknown monogenetic trematode attached to its genital segment and furca, the authors made no allusion to the case of epizoism which they figured. H.C.

28—Hawaii Medical Journal.

- a. ALICATA, J. E. & KARTMAN, A. Y., 1948.—“Incidence of oxyuriasis among a group of school children in Honolulu.” 7 (3), 214–215.

(28a) In Honolulu an incidence of 31.1% infection with *Enterobius* was ascertained amongst 138 schoolchildren. This was based on two NIH swab examinations: on the basis

of seven swabs the probable incidence would be about 38%. The numbers of cases in the two sexes were practically equal. Children of Caucasian ancestry had an incidence of 40% whereas in those of Oriental origin the incidence was only 21%.
R.T.L.

29—Indian Medical Gazette.

- a. KRISHNASWAMI, C. V., 1948.—“Maniacal symptoms in ascariasis.” 83 (1), 38–39.

30—Indian Veterinary Journal.

- a. KALE, G. C., 1948.—“Bovine nasal schistosomiasis—a record of treatment carried in Dharwar district in 1942–43.” 24 (5), 351–353.

(30a) Bovine nasal schistosomiasis is prevalent in the Dharwar district particularly in Haveri, Hangal, Hirekerur, Ranebennur and part of Bankapur talukas. No less than 25% of the cattle in most of the villages in Hangal Taluka are affected. The local intermediaries are *Indoplanorbis exustus* and *Helix* sp. 145 infected animals were treated by intravenous injections of a 6% solution of tartar emetic, 1.635 c.c. per 100 lb. body-weight being injected on six successive days. Three deaths occurred; 90% were cured.
R.T.L.

31—Journal of the American Medical Association.

- a. LOUGHLIN, E. H. & STOLL, N. R., 1948.—“Hookworm infections in American servicemen with reference to the establishment of *Ancylostoma duodenale* in the Southern United States.” 136 (3), 157–161. [Discussion p. 161.]
b. CHANG, T. H., SMITH, G. W., RIESSENMAN, F. R. & ALSTON, E. F., 1948.—“Cerebral granuloma due to schistosomiasis.” 136 (4), 230–238.

(31a) The return of the U.S. army personnel from the Pacific war area with asymptomatic and unrecognized infections with *Ancylostoma duodenale* may lead to the establishment of this species in the southern coastal states, but an autochthonous infection has not yet been reported.

R.T.L.

(31b) Reports of cerebral schistosomiasis are rare, 38 cases having been recorded since 1890. All of these were due to *Schistosoma japonicum* except three due to *S. haematobium*. The authors give details of two cases since seen by them in U.S. Army hospitals. Neither had a history of symptoms prior to the neurological manifestations.
R.T.L.

32—Journal of the American Veterinary Medical Association.

- a. ADLER, H. E. & MOORE, E. W., 1948.—“Renal coccidiosis and gizzard worm infection in geese.” 112 (851), 154.
b. TURK, R. D. & HALE, F., 1948.—“Observation on the use of sodium fluoride as an ascaricide in swine.” 112 (854), 363–366.
c. HOFFERD, R. M., 1948.—“Animal diseases transmissible to man.” 112 (855), 432–435.

(32a) Numerous specimens of *Amidostomum anseris* occurred in the gizzard of two Toulouse goslings which died of renal coccidiosis in the State of Washington.
R.T.L.

(32b) Turk & Hale found no significant difference in the rate of gain between pigs treated for *Ascaris lumbricoides* with oil of chenopodium or with sodium fluoride, but the number of adult ascarids recovered at autopsy was less in those treated with sodium fluoride. A measured amount of the anthelmintic in a measured quantity of feed was deemed desirable. For a pig weighing 25 lb., 1% of sodium fluoride was incorporated in 1 lb. of feed. In milk, sodium fluoride was distasteful and considerably more toxic than in dry feed. Treated food was more palatable if sufficient water was added to make a slop. Group-fed pigs were penned according to size to ensure an appropriate share to each animal.
R.T.L.

33—Journal of the Ministry of Agriculture. London.

- a. STEWART, W. Lyle, 1948.—“Black disease and liver rot in sheep. A case history.” 55 (3), 108–110.

(33a) During the autumn of 1947 at least 20 reports of sudden deaths among ewes and lambs were investigated at King's College Laboratory, Newcastle-on-Tyne. Clostridial organisms and immature *Fasciola hepatica* in combination produced the gross liver lesions characteristic of the “black disease” previously reported from Australia and Scotland. Cases of acute liver rot alone were also observed. Lyle-Stewart points out that carbon tetrachloride is ineffective against the migrating immature flukes but that vaccination against the *Clostridium* infection has proved valuable in Australia. However, the ultimate control of “black disease” is bound up with control of the molluscan vectors of the fluke.

R.T.L.

34—Journal of Parasitology.

- a. VAN CLEAVE, H. J., 1948.—“Expanding horizons in the recognition of a phylum.” 34 (1), 1–20.
 b. WILLIAMS, R. W., 1948.—Studies on the life cycle of *Litomosoides carinii*, filariid parasite of the cotton rat, *Sigmodon hispidus litoralis*.” 34 (1), 24–43.
 c. LINCICOME, D. R., 1948.—“Observations on *Neoechinorhynchus emydis* (Leidy), an acanthocephalan parasite of turtles.” 34 (1), 51–54.
 d. READ, C. P., 1948.—“*Spirometra* from Texas cats.” 34 (1), 71–72.
 e. HOOD, M., 1948.—“*Diphyllbothrium* infection in Florida.” 34 (1), 72.

(34a) Van Cleave traces the growth of scientific information regarding the Phylum Acanthocephala in illustration of the gradual expansion and evaluation of concepts in taxonomy. There is a tabular analysis of the characters available for the recognition of its classes and orders. In the two classes and four orders there are now more than 80 genera and 400 valid species grouped into about 20 families.

R.T.L.

(34b) About 43% of cotton rats in Florida are naturally infected with *Litomosoides carinii* in about equal numbers in both sexes. The habits and ecology of the rats from various localities on the west coast of Florida are described and an account is given of the filarial infection under the headings:—prepatent period, clinical signs, diagnosis, infection period, pathology and mode of transmission. The paper is mainly concerned with a study of potential arthropod vectors, in which experimental work was carried out with various Culicidae, Tabanidae and Ceratopogonidae, as well as with a number of wingless arthropods. Development of the filariae to infectivity took place only in the mite, *Liponyssus bacoti*. About 14% of the mites became infected experimentally and 30 days or more were required for the development which takes place within the haemocoel. Infective larvae are 800 μ to 1,000 μ long by 15.6 μ in width. Transmission of the infection to cotton rats placed in contact with infected mites was demonstrated, and evidence was obtained that infection occurs through the skin and not by ingestion of infected mites. The prepatent period is usually 70–80 days in laboratory-infected cotton rats. The adult worms may live for 60 weeks or more in the pleural cavity and attain a peak of microfilarial production between the 17th and 20th weeks. After the death of the adult worms, microfilariae are still to be found in the blood 50 or 60 days later. It is believed that the microfilariae enter the blood stream from the pleural cavity via the lungs and possibly the heart. They have the ability to burrow between and into muscle fibres.

J.J.C.B.

(34c) Lincicome contributes observations on the morphology and biology of the juveniles of *Neoechinorhynchus emydis*, which occur in the foot, mantle, tentacles and body of the snails *Campeloma rufum* and *Ceriphasia semicarinata*. The form and arrangement of the anterior proboscis hooks is dimorphic. Discrepancies between the recorded measurements of hooks on the proboscis of adults may be explained by faulty orientation in the optical field.

R.T.L.

(34d) Read has found *Spirometra mansonoides* in two cats in Texas.

R.T.L.

(34e) A survey by faecal examination of 640 members of the negro community in Jefferson County, Florida, revealed no infections with *Diphyllbothrium latum* in 1946. A similar survey in 1947 of 137 persons was also negative, except for one boy who had been diagnosed positive and treated in 1943 but was still passing eggs. Of six dogs examined one was infected. The boy was treated again with oleoresin of aspidium and 17 specimens of *D. latum* were recovered, each complete with head and varying in length from 10 to 41 inches. J.J.C.B.

35—Journal of Tropical Medicine and Hygiene.

- a. MAKARI, J. G., 1948.—“Serial cephalin flocculation curves: their application in the study of tropical diseases and their relation to a new resistance factor.” 51 (1), 8–20.
- b. MEESER, C. V., ROSS, W. F. & BLAIR, D. M., 1948.—“Further observations on the macroscopic diagnosis of urinary schistosomiasis.” 51 (3), 54–59.

(35a) This study of the serial cephalin flocculation curves (SCF) of patients suffering from hepatitis, deals chiefly with their application in malariology. In a table setting out the curves obtained in a wide range of tropical diseases, the occurrence of alteration curves in four cases of liver infection with *Fasciola hepatica* is recorded. R.T.L.

(35b) The authors describe a technique for the preparation of urine specimens for macroscopic diagnosis of *Schistosoma haematobium* infections, and the construction and use of an examination rack for this purpose. The rack holds ten centrifuge tubes with urine specimens which are illuminated specially to facilitate the observation of hatched miracidia with a hand lens. In a comparative trial with 1,300 specimens, 211 were positive by combined micro- and macroscopic methods. The macroscopic method revealed 35 cases not diagnosed microscopically and 88 cases were diagnosed microscopically which, since no miracidia hatched out, were missed by the macroscopic method. The method described has the advantage of facilitating field surveys when trained staff and microscopes are not available, and also of the additional information on the viability of the eggs. J.J.C.B.

36—Lancet.

- a. MACANDREW, M. & DAVIS, E., 1948.—“Trichiniasis presenting with foot-drop and facial palsy.” Year 1948, 1 (6491), 141.
- b. GIRGIS, B. & AZIZ, S., 1948.—“Treatment of schistosomiasis.” Year 1948, 1 (6493), 206–209.

(36a) This is a clinical report of a case of trichinelliasis seen in London in which there was facial palsy and foot-drop with an eosinophile count of 40%, splinter haemorrhages and a clear history of eating undercooked pork, but in which an intradermal test with trichinella antigen was negative. R.T.L.

(36b) The method of Alves & Blair of treating schistosomiasis with intensive doses of sodium antimony tartrate has been studied in 16 cases. Although the immediate reactions were rather severe, no late after-effects occurred, but the patients invariably looked ill and dreaded the injections. The authors consider this 2-day treatment an advance on Christopherson's original method, but too drastic for use in large-scale campaigns; moreover there was a relapse rate of 31%. A six-day treatment reduced the severity of the reactions, but the relapse rate was 33%. R.T.L.

37—Lingnan Science Journal.

- a. HU, S. M. K., 1948.—“Notes on the experimental infection of *Culex pipiens* var. *pallens* Coq. with *Microfilaria malayi* Brug.” 22 (1/4), 79–83.
- b. CHEN, K. C., 1948.—“A note on the filaria survey in Fukien Province.” 22 (1/4), 85–92.
- c. CHEN, H. T., 1948.—“Some early larval stages of *Centrocestus formosanus* (Nishigori, 1924).” 22 (1/4), 93–104.

(37a) Only 2.06% of *Culex pipiens* var. *pallens* experimentally fed on a case heavily infected with *Microfilaria malayi* acquired infection. [The details and tables given have already appeared in *Chin. med. J.*, 1946, 64 (7/8), 213–217.] R.T.L.

(37b) Cases of elephantiasis were reported by the health centres of 38 out of 63 hsiens which were the subject of an inquiry into the prevalence of filariasis in Fukien Province. The disease was reported as especially prevalent in 15 of the 38. Examination of the blood of 207 suspected filariasis cases in different hospitals at Foochow revealed 83 positives, or 40.1%. Of these, 58 were *Mf. bancrofti* and 25 *Mf. malayi*. Data concerning the birthplace of these cases, together with the results of blood examination for microfilariae in representative regions of the Province are summarized in tables and in a map. J.J.C.B.

(37c) A species of cercaria from *Melania (Melanoides) tuberculata chinensis* was identified as that of *Centrocestus formosanus* by experimental feeding to fish and then to cats and dogs. The cercariae and rediae are described in detail and fundamental differences are found to exist between them and Nishigori's original description of these larvae. The cercaria resembles but differs from *Cercaria Indicae* III of Sewell which is therefore considered to be a distinct species of *Centrocestus*. The local fish which were successfully infected were *Macropodus opercularis*, *Puntius semifasciolatus*, *Limia caudofasciata* and *Siniperca chuatsi*. Although frogs (*Rana limnocharis*) are often found naturally infected with metacercariae, they could not be infected experimentally. Preliminary experiments with tadpoles of this species, however, indicate that these are susceptible to infection. J.J.C.B.

38—Nature. London.

- a. DOUGHERTY, E. C. & CALHOUN, H. G., 1948.—“Possible significance of free-living nematodes in genetic research.” [Correspondence.] 161 (4079), 29.
- b. SMYTH, J. D., 1948.—“Development of cestodes *in vitro*: production of fertile eggs; cultivation of plerocercoid fragments.” [Correspondence.] 161 (4082), 138.
- c. MACNAB, G. M., 1948.—“A polysaccharide from hydatid cyst fluid.” [Correspondence.] 161 (4087), 310.
- d. ANANTARAMAN, M., 1948.—“Oribatid mites and their economic importance.” 161 (4089), 409–410.
- e. DUNLOP, G., 1948.—“Food production from hill grazing land.” 161 (4094), 585–587.
- f. DAWES, B., 1948.—“A rare coelom-dwelling trematode.” 161 (4095), 642–643.
- g. TAYLOR, E. L. & MOZLEY, A., 1948.—“A culture method for *Lymnaea truncatula*.” [Correspondence.] 161 (4101), 894.

(38a) Dougherty & Calhoun suggest that free-living nematodes belonging to the Sub-Order Rhabditina may provide material suitable for the study of problems connected with cellular constancy (eutely) and other cognate cytogenetic matters in that they present some very interesting sex-patterns with simple chromosome numbers. They are comparatively easy to culture on certain media and may thus afford an opportunity for the study of physiological mutants. T.G.

(38b) Smyth has previously reported the *in vitro* cultivation of sexually mature but infertile *Schistocephalus solidus* and *Ligula intestinalis* [see *J. exp. Biol.*, 1946, 23, 47 and *Helm. Abs.*, 16, No. 40k]. Using one *Ligula* larva per tube of 50 c.c. horse serum renewed every 24 hours, he has now succeeded in rearing normal adults with 6% of fertile eggs which hatched out normal coracidia. It can be stated, therefore, that *Ligula* is self-fertilizing. Fragments of plerocercoids similarly cultivated developed and produced eggs in exactly the same manner as complete larvae, but there was no regeneration of lost tissues. E.M.S.

(38c) A polysaccharide obtained by Macnab from a sheep hydatid gave a positive reaction with the serum of a patient with pulmonary hydatid, and is probably the specific antigenic factor of hydatid fluid. The mode of preparation will be published later. R.T.L.

(38e) In recommending the introduction of dairy farming to the Scottish hill grazings, combined with complete rest of the grazings for two months during February to April, Dunlop gives it as his opinion that the effect on the worm burden of hill sheep would be beneficial. E.M.S.

(38f) Two further complete specimens of *Dictyocotyle coeliaca* Nybelin, 1941, have been recovered from the outside of the stomach of *Raja clavata*. They are described in detail and a photomicrograph of one specimen is given. Dawes refers the species to the genus *Calicotyle*; it is distinguished from *C. kroyeri* by the absence of hooks and the presence of numerous shallow loculi on the opisthaptor. E.M.S.

(38g) Taylor & Mozley have been able to breed *Limnaea truncatula*, important as an intermediary for *Fasciola hepatica*, in unlimited numbers by using artificial mud flats with small pools of natural pond water. Supplementary food is given in the form of powdered natural chalk and fine oatmeal flour.

E.M.S.

39—North American Veterinarian.

- a. CROSS, S. X. & ALLEN, R. W., 1948.—“Incidence of intestinal helminths and trichinae in dogs and cats in Chicago.” 29 (1), 27–30.
- b. REBRASSIER, R. E., 1948.—“Toxin production by tapeworms.” [Questions & Answers.] 29 (1), 40.

(39a) In Chicago 100 dogs showed the following helminth infections: *Toxocara canis* 12%, *Toxascaris leonina* 11%, *Ancylostoma caninum* 7%, *Trichuris vulpis* 20%, *Physaloptera rara* 1%, *Taenia pisiformis* 10%, and *Dipylidium* sp. 39%. The incidence of infection in 57 cats was *Toxocara cati* 37.3%, *Ancylostoma caninum* 5.9%, *Taenia taeniaeformis* 3.9%, *Dipylidium* sp. 39.2%. Trichinella larvae occurred in 17% of the dogs and in 21.6% of the cats examined. These figures are markedly higher than previously reported for *Trichinella* in cats and dogs, but agree closely with the figure of 16% of 428 human autopsies reported by Hood & Olson [see Helm. Abs., 8, No. 2e] and appear to lend credence to the hypothesis of Sawitz [Helm. Abs., 8, No. 86a] that the incidence of *Trichinella* in cats is an index of human infection.

R.T.L.

(39b) Rebrassier, replying to a correspondent, points out that whereas *Diphyllbothrium latum* and *Taenia saginata* secrete toxins there are no published data to prove that *Dipylidium caninum* does so.

R.T.L.

40—Pacific Science.

- a. ALICATA, J. E., 1948.—“Observations on parasites of domestic animals in Micronesia.” 2 (1), 65–66.

(40a) The helminths of economic importance here reported from Micronesia are: *Fasciola hepatica* from cattle on Guam, with *Fossaria ollula* as the local intermediate host; *Stephanurus dentatus* and *Oesophagostomum dentatum* from pigs on Ponape and Guam, and *Metastrongylus elongatus* from pigs on Guam; *Tetrameres* sp., *Heterakis* spp. (probably *H. gallinae* and *H. lingnanensis*), *Amoebotaenia* sp. (probably *A. sphenoides*) and *Raillietina* sp. (probably *R. echinobothrida*) from chickens on Ponape; *Ancylostoma caninum* and *Dipylidium* sp. from a dog on Ponape.

R.T.L.

41—Parasitology.

- a. HOBSON, A. D., 1948.—“The physiology and cultivation in artificial media of nematodes parasitic in the alimentary tract of animals.” 38 (4), 183–227.
- b. REES, G., 1948.—“A study of the effect of light, temperature and salinity on the emergence of *Cercaria purpurae* Lebour from *Nucella lapillus* (L.).” 38 (4), 228–242.

(41a) Hobson reviews our knowledge of the physiology of the nematodes parasitic in animals, particularly those infesting the gut, and the attempts that have been made to maintain the larval and adult stages alive *in vitro*. He deals successively with (i) the osmotic pressure and electrolytic composition of the digestive secretions and with the osmotic pressure, electrolytic composition, hydrogen-ion concentration, gases and bile salts concentration of the contents of the alimentary canal; (ii) the chemical composition of the nematode body and of its cuticle, intestine, body fluid, musculature, nervous and reproductive systems; (iii) the relation of the parasitic nematode to the chemical and physical conditions of its environment; (iv) the nutrition of intestinal nematodes; (v) the metabolism of parasitic nematodes; and (vi) their survival under artificial conditions.

R.T.L.

(41b) The emergence of *Cercaria purpurae* is shown to have a definite periodicity. Large numbers emerge when the molluscan host is exposed to light and very few during the hours of darkness. Either increase or decrease of temperature or of salinity has an inhibitory effect.

R.T.L.

42—Phytopathology.

- a. JENKINS, W. A., 1948.—“Root-rot complexes of tobacco and small grains in Virginia.” [Abstract of paper presented at the 39th Annual Meeting of the American Phytopathological Society, Chicago, Illinois, December 28 to 30, 1947.] 38 (1), 14-15.
- b. NEWHALL, A. G. & LEAR, B., 1948.—“Field trials in New York with ethylene dibromide and DD mixture against the root-knot nematode.” [Abstract of paper presented at the 39th Annual Meeting of the American Phytopathological Society, Chicago, Illinois, December 28 to 30, 1947.] 38 (1), 19-20.
- c. SCHMITT, C. G., 1948.—“Chemicals for control of the golden nematode of potatoes.” [Abstract of paper presented at the 39th Annual Meeting of the American Phytopathological Society, Chicago, Illinois, December 28 to 30, 1947.] 38 (1), 23.

(42a) Jenkins has studied injury to feeder roots of tobacco and small grains in Virginia and concludes that primary injury may be caused by nematodes belonging to the genera *Pratylenchus* and *Ditylenchus*. Further damage is then caused by fungal and bacterial soil associates. In the case of small grains such factors as relatively low soil temperatures and relatively high calcium levels appear to favour nematode population increase and severity of root injury. T.G.

(42b) D-D mixture and a 10% ethylene dibromide mixture were applied in rows 10 and 12 inches apart and at 200 and 300 lb. per acre on muck and upland soils. Carrots were subsequently grown and showed an increase in yield of No. 1 carrots of 50.9% above the control after D-D, and 49.4% after ethylene dibromide, on the muck soil. On two upland soils increases of 155% and 122.8% respectively were obtained. The higher dosage and the narrower row-spacing were the more effective, but the doses were near the limit for spring treatment on account of possible injury to the seedlings and flavouring of the carrots. M.T.F.

(42c) In a pot test at 23 gallons per acre, allyl bromide, D-D mixture, trimethylene bromide, ethylene bromide and Iscobrome D were all rather effective in killing cysts of *Heterodera rostochiensis*. Under similar conditions at 76 gallons per acre, only ethylene dibromide and Iscobrome D eradicated this parasite. R.T.L.

43—Plant Disease Reporter.

- a. FENNE, S. B., 1948.—“Tobacco diseases in Virginia—1947.” 32 (1), 16-18.
- b. HILDEBRAND, E. M., 1948.—“Some noteworthy disease occurrences in Texas.” 32 (1), 19.

(43a) Fenne reports on tobacco diseases in Virginia in 1947 and mentions that root-knot due to *Heterodera marioni* was more prevalent than for several years. There was also much root-rot caused by *Pratylenchus* sp. giving rise to severe wilting of the plant during the day-time. In some fields the crop was severely injured but in others it recovered following adequate rainfall. T.G.

(43b) Hildebrand mentions the occurrence in Texas of foliar disease of chrysanthemums caused by the eelworm, *Aphelenchoides ritzema-bosi*. The plants had been obtained from Ohio and only one variety appeared to be affected. T.G.

44—Proceedings of the Helminthological Society of Washington.

- a. KATES, K. C. & RUNKEL, C. E., 1948.—“Observations on oribatid mite vectors of *Moniezia expansa* on pastures, with a report of several new vectors from the United States.” 15 (1), 10, 19-33.
- b. ALLEN, R. W. & ANDREWS, J. S., 1948.—“Observations on the viability of eggs of *Ascaris* removed from swine by treatment with sodium fluoride.” 15 (1), 38-39.
- c. DIKMANS, G., 1948.—“Another case of guinea worm, *Dracunculus* sp., infestation in a dog in the United States.” 15 (1), 39-40.

(44a) Kates & Runkel report as new vectors of *Moniezia expansa* the oribatid mites *Galumna virginensis*, *Oribatula minuta*, *Peloribates curtispilus* and *Protoschelobates seghettii*. *Scheloribates laevigatus*, known to be a vector in Russia, is now recorded as a carrier in the United States. On a permanent pasture at the Agricultural Research Center, Beltsville, 133 *G. virginensis* collected per square foot of turf gave an average cysticeroid infection rate

of 3.9% ; the maximum number of cysticercoids in one mite was thirteen. From a permanent pasture at Newell, South Dakota, 221 *S. laevigatus* recovered per square foot of soil gave an average cysticercoid rate of 2.8%. On an experimentally infected plot the cysticercoid rates in the following year were: *G. virginiensis* 34%, *G. emarginata* 11%, while *O. minuta*, *Peloribates curtipilus* and *Protoschelobates seghettii* gave a combined rate of 6%. R.T.L.

(44b) Sodium fluoride administered for the removal of *Ascaris lumbricoides* from pigs had no action on the subsequent development and infectivity of the *Ascaris* eggs. R.T.L.

(44c) A portion of *Dracunculus* sp. was removed from an abscess in the hind leg of a dog in North Carolina. This is the second record of guinea-worm infection of dogs in the New World, where it has also been reported from the raccoon, silver fox, mink, muskrat, skunk and weasel. R.T.L.

45—Proceedings of the Indian Academy of Sciences. Section A.

- a. KHORANA, M. L., MOTIWALA, D. K. & VENKATARAMAN, K., 1948.—“Ant-helmintics—Part III. Anthelmintic activity of *Calycopteris floribunda*.” 27 (2), 121–127.

(45a) Tests with various extracts of the leaves of *Calycopteris floribunda*, using earthworms as the test animals, showed that the only toxic constituent was calycopterin. While it is more toxic than santonin and chenopodium it is not as toxic as carbon tetrachloride, carbon disulphide or hexylresorcinol. R.T.L.

46—Proceedings of the Linnean Society of New South Wales.

- a. HARWOOD, P. D., 1948.—“*Strongyluris davisi*, n.sp. (Nematoda), from the stomach of a lizard, *Diporophora australis*.” (1947), 72 (5/6), 311–312.

(46a) *Strongyluris davisi* n.sp. from the lizard, *Diporophora australis*, in New South Wales is distinguished from *S. media* by less prominent caudal alae, slightly longer spicules and a longer oesophagus. The female has a shorter tail and the vulva is nearer the posterior end. R.T.L.

47—Proceedings of the Zoological Society of London.

- a. FANTHAM, H. B. & PORTER, A., 1948.—“The parasitic fauna of vertebrates in certain Canadian fresh waters, with some remarks on their ecology, structure and importance.” 117 (4), 609–649.
- b. HAMERTON, A. E. & REWELL, R. E., 1948.—“Report of the Pathologist for the year 1946.” 117 (4), 663–672.
- c. PORTER, A., 1948.—“Report of the Honorary Parasitologist for 1946.” 117 (4), 673–674.

(47a) Helminth and protozoan parasites were studied and collected from fish and amphibians in various lakes and rivers in Quebec, and some from streams near Halifax, Nova Scotia. In *Bufo americanus* and in three *Rana* spp., constant differences in entozoal population were noted. Nematodes were not common in any host, the fishes examined carrying heavy infestations only of larval *Diphyllbothrium* sp. (chiefly in *Salvelinus fontinalis*), various species of trematodes in the gallbladder (in *S. fontinalis* and other hosts), *Echinorhynchus lateralis* (chiefly in *S. fontinalis*) and *Prosthodiplostomum* sp. larvae (skin infections in *Micropterus dolomieu* and *Ambloplites rupestris*). The pathology of these infestations is described, and it is observed that very large numbers of *Echinorhynchus* produced singularly little obvious damage. The *Diphyllbothrium* sp. is considered from a feeding test not to be infective to man. The possibility of throat infection in man with *Clinostomum* spp. is pointed out. Cysts of *Metorchis* spp. were found in fish in only one locality in central Quebec. E.M.S.

(47b) Included in this report is a list of helminth parasites found in 29 birds and 23 mammals which died in the Zoological Gardens in London during 1946. Hamerton & Rewell remark on the frequency of intense natural infections of reptiles, especially snakes. R.T.L.

(47c) A considerable number of helminths belonging to species not yet identified are listed. These were collected from animals which died in 1946 in the Zoological Gardens, London.

R.T.L.

48—Report. Northern Counties Animal Diseases Research Fund.

- a. STEWART, W. Lyle, 1948.—“Research work into sheep and lamb diseases and allied problems.” 14th Report, 48 pp.

(48a) Several outbreaks of sudden deaths among sheep in the north of England in 1947 were due to acute liver rot and to “black disease” where the immature liver-flukes are associated with micro-organisms of the *Clostridium* type. It is pointed out that while 1 c.c. of carbon tetrachloride is quite ineffective against the immature flukes, a measure of control is obtained by 10 c.c. given with medicinal liquid paraffin.

R.T.L.

49—Research. London.

- a. LAPAGE, G., 1948.—“The study of anthelmintics.” 1 (7), 310–315.

(49a) From a summary of the work of Baldwin, Trim, and Rogers [see *Helm. Abs.*, 12, No. 98a; 13, Nos. 51c, 136b; 16, No. 25a], Lapage indicates the manner in which the study of nematode physiology may influence methods for their control or injury. Studies on the host-parasite relationship are considered to provide the best basis for control measures.

R.T.L.

50—Scottish Agriculture.

- a. REID, R. D., 1948.—“Strawberry breeding at Auchincruive.” 27 (4), 218–223.

(50a) The object of the strawberry breeding programme was to produce new varieties resistant to red core root-rot caused by *Phytophthora fragariae*. Amongst other diseases of strawberries, Reid refers to abnormalities associated with the bud eelworm, *Aphelenchoides fragariae*. Warm-water treatment of infested plants for 30 minutes at 116.6°F. killed the eelworms but also killed the plants. With iodine at the rate of 1 : 20,000 added to water at 110°F. eelworms were killed in 30 minutes and the plants survived. However, they later became re-infested due, it is presumed, to the survival of nematode eggs. The only method of field control of eelworm disease is by careful selection of propagating material.

M.T.F.

51—Thorax.

- a. LOGAN, A. & NICHOLSON, H., 1948.—“Hydatid disease of the lung.” 3 (1), 1–14.

52—Tierärztliche Umschau.

- a. MENDHEIM, H., 1948.—“Beiträge zur Biologie und Verbreitung des Katzenbandwurmes.” 3 (1/2), 15–16.
b. ENDREJAT, 1948.—“Gibt es eine erfolgversprechende Therapie bei Lungenwurmseuche der Schafe? (Auch wenn der Prozess schon stark fortgeschritten ist und die Tiere im Ernährungs- und Kräftezustand schon sehr schlecht sind?)” [Questions & Answers.] 3 (7/8), 112.

(52a) Mendheim reviews the facts relating to the host distribution of the larva and adult of *Taenia taeniaeformis*, discusses the question of host-specificity and refers to the possible identity of *T. infantis* with *T. taeniaeformis*. Two new hosts, *Mus spicilegus* and *Apodemus flavicollis*, are recorded for *Cysticercus fasciolaris*.

H.C.

(52b) Endrejat describes the treatment of Dictyocaulus infestation by intratracheal injection of antimosan or freshly prepared iodine solutions. Sheep in very bad condition should be treated only after their general health has been improved by tonic treatment. Synthetocaulus can only be controlled by preventive measures.

E.M.S.

53—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. LE ROUX, P. L., 1948.—“Twenty-four microscope preparations and 615 camera lucida drawings, illustrating the shape and size of the eggs of species of schistosomes of man and animals.” [Demonstration.] **41** (4), 428–430.
- b. ALVES, W., 1948.—“Observations on *S. mattheei* and *S. haematobium*. Adults and eggs from experimental animals and man.” [Demonstration.] **41** (4), 430–431.
- c. BUXTON, P. A., 1948.—“Slides made by Sir Patrick Manson (one of them dated July, 1894) showing development of guinea-worm larvae in *Cyclops*; also one slide of *Wuchereria* (*Filaria*) *bancrofti* in a mosquito.” [Demonstration.] **41** (4), 431–432.
- d. YOELI, M., RODEN, A. T. & ABBOTT, J. D., 1948.—“1. Smears from subcutaneous nodules of a mule showing microfilariae (?) *Onchocerca* sp. 2. Developmental forms of (?) same species in *Anopheles sacharovi* and *A. maculipennis typicus*.” [Demonstration.] **41** (4), 444.
- e. MACNAMARA, O. D., 1948.—“The effect of diet and helminthic treatment on African school children.” **41** (4), 519–524.
- f. RANSFORD, O. N., 1948.—“Schistosomiasis in the Kota Kota district of Nyasaland.” **41** (5), 617–628.
- g. LOVETT-CAMPBELL, A. C., 1948.—“The surgical treatment of the large elephantoid scrotum.” **41** (5), 645–646.
- h. ROSS, W. F., 1948.—“Acriflavine in the treatment of schistosomiasis.” [Correspondence.] **41** (5), 685–686.

(53a) In female specimens of *Schistosoma haematobium*, from the liver of a Southern Rhodesian, the ovary was equatorial and not in the posterior third of the body. Schistosomes from marsh buck, cattle, red lechwe and horse (hitherto recorded from Northern Rhodesia as *S. spindale*) are considered to belong to a distinct species. *S. margrebowiei* cannot be distinguished from *S. spindale* by the shape of the uterine eggs or the morphology of the females: in this species the males alone provide differential characters. Le Roux states that there is reason to believe that it may infect man.

R.T.L.

(53b) Alves draws attention to inaccuracies in textbook illustrations and descriptions of *Schistosoma haematobium* and its eggs. He suggests that the eggs “intermediate” between *S. haematobium* and *S. mattheei* found in urine from human cases may be the result of crossing of male *S. haematobium* and female *S. mattheei*. As he has failed to infect small laboratory animals with *S. haematobium*, he is of opinion that descriptions of *S. haematobium* reared experimentally in these animals are based on a confusion between *S. haematobium* and *S. mattheei*.

R.T.L.

(53c) Manson’s original preparations of *Dracunculus medinensis* infecting *Cyclops*, and of an advanced larva of *Wuchereria bancrofti* in *Culex pipiens* have been presented to the Wellcome Historical Medical Museum.

R.T.L.

(53d) Microfilariae of *Onchocerca* sp., obtained from subcutaneous nodules of a mule near the Struma River in Eastern Macedonia, were similar to those recorded from horses and mules in Greece by Papadaniel in 1936 [Helm. Abs., 5, No. 429b]. In 3% of 450 *Anopheles sacharovi* and one specimen of *A. maculipennis typicus*, developmental forms of filariae were found. Their connection with the local *Onchocerca* infections is doubtful.

R.T.L.

(53e) Children in central Nigeria are richly infected with helminths and are undernourished. Routine helminthic treatment appeared to have no marked effect on the general health, and cheap extra diet had only a slight effect. 65% of those treated for hookworm became reinfected in three months. Macnamara suggests that the repeated courses of chenopodium or tartar emetic needed to keep a child free from helminths might be more deleterious than the parasites to its general health.

R.T.L.

(53f) The freshwater Mollusca collected in the Kota Kota district of Nyasaland comprise eight species. *Physopsis globosa* coincides in distribution with a high infection rate with schistosomiasis haematobia but was only found parasitized by trematode larvae between July and the beginning of the rains. *Biomphalaria pfeifferi* is the probable host of *S. mansoni* in the district. *Bulinus forskali* occurred in large numbers but no infected samples were obtained. *S. haematobium* eggs occurred in 53% of 5,189 persons examined and in 51% of 1,857 children

between six and twelve years old. A provocative dose of suramin sometimes revealed eggs in children previously reported negative. A map illustrates the distribution of urinary schistosomiasis in the district. Hand-torn leaves of *Tephrosia vogelii*, a locally prevalent perennial shrub which is used as a fish poison, are advocated as a molluscicide until rural sanitation becomes better developed. R.T.L.

(53h) In a small series of cases of urinary schistosomiasis, the effect of acriflavine was almost negligible: only one case remained cured after two months. R.T.L.

54—Veterinary Medicine.

- a. TODD, F. A., 1948.—“Trichina inspection in Germany.” 43 (1), 23–25.
- b. DOLL, E. R. & HULL, F. E., 1948.—“Survival of sheep nematode larvae on pasture during summer.” 43 (4), 147–148.
- c. OTTO, G. F., 1948.—“Immunity against canine hookworm disease.” 43 (5), 180–191.

(54a) The incidence of trichinellosis in Germany is very low: only 120 deaths from this infection were recorded between 1900 and 1927. In Berlin no case has been reported since 1883. The infection rate in the 79 million pigs inspected during 1934–37 was 0.44 per 100,000. The techniques of examination and the methods of instruction and training followed in Germany, before and since the recent hostilities, are briefly summarized. R.T.L.

(54b) During each of the years 1945 to 1947, plots of permanent bluegrass pasture in Kentucky, heavily infested with eggs of sheep helminths in June, were kept clipped throughout July to September, and were then grazed down in hot dry weather by parasite-free lambs. In the season 1945 a few infective larvae of *Nematodirus*, *Haemonchus* and *Ostertagia* had survived three months while those of *Trichostrongylus*, *Cooperia*, *Oesophagostomum* and *Strongyloides* had failed, but during the succeeding years 1946 and 1947 the pastures did not give rise to any infections. R.T.L.

(54c) Experimental infection of dogs with *Ancylostoma caninum* gave evidence that sublethal infections produce a highly protective immunity. High initial infections produce acute anaemia and even death, but on recovery these dogs are highly refractory to reinfection. Mature animals are much more responsive immunologically than puppies. Malnutrition adversely affects the production and retention of immunity. J.W.G.L.

55—Veterinary Record.

- a. JAMIESON, S., THOMPSON, J. J. & BROTHERSTON, J. G., 1948.—“Studies in black disease. I. The occurrence of the disease in sheep in the north of Scotland.” 60 (2), 11–14.
- b. McLEAN, A., 1948.—“Demonstration of *Cysticercus bovis*.” [Demonstration.] 60 (2), 16–17.
- c. ANON., 1948.—“Phenothiazine overdosage or idiosyncrasy in equines.” [Questions & Answers.] 60 (2), 17.
- d. ROLLINSON, D. H. L., 1948.—“Severe symptoms and losses caused by faulty administration of phenothiazine pellets.” 60 (4), 40.
- e. GIBBS, W. A., 1948.—“Over-dosage of phenothiazine in the equine.” [Correspondence.] 60 (4), 43–44.
- f. HERROD-TAYLOR, E. E., 1948.—“Phenothiazine over-dosage or idiosyncrasy in equines.” 60 (7), 71.
- g. ANON., 1948.—“Association’s report on diseases of sheep.” 60 (9), 95.
- h. CUSHNIE, G. H. & WHITE, E. G., 1948.—“Seasonal variations in faeces worm-egg counts of sheep.” 60 (10), 105–107.
- i. DROMEY, L. & CAMPBELL, D. T. J., 1948.—“Death of a lamb caused by a single *Cysticercus tenuicollis*.” 60 (10), 109.
- j. OGILVIE, D. D., 1948.—“Recent advances in chemotherapy as applied to practice.” 60 (12), 129–134.
- k. THOMSON, A. & ROSS, H. E., 1948.—“Black disease of sheep.” [Correspondence.] 60 (13), 154.
- l. ANON., 1948.—“Parasitic aneurysm in horses.” [Questions & Answers.] 60 (21), 249.
- m. TUTT, J. F. D., 1948.—“I.—Castration of colts; II.—Parasitic aneurysm in horses.” [Correspondence.] 60 (24), 283.

(55a) "Black disease", i.e. infectious necrotic hepatitis in sheep, apparently due to an association of *Clostridium oedematiens* with invasion of the liver by immature *Fasciola hepatica*, is reported from the County of Caithness, Scotland. An account is given of the clinical symptoms, differential diagnosis and post-mortem findings in 30 sheep. R.T.L.

(55b) At the abattoir in Belfast 0.23% of all bovines slaughtered were found to harbour *Cysticercus bovis* during routine meat inspection in which the number of incisions was necessarily limited. Four different types of cysts are described. The cysts were almost always limited to the masseter muscles, 60% occurring in the left external masseter, 29% in the right external masseter, 11% in both and 2% in the left internal masseter only. R.T.L.

(55g) The dosage of copper sulphate and nicotine sulphate given on p. 70 of the National Veterinary Medical Association's "Report on diseases of farm livestock: Section II—Diseases of sheep" may occasionally prove toxic if the sheep belong to a small breed or are in poor condition and unless the dose is carefully measured, e.g. with a syringe marked in cubic centimetres to ensure accuracy. R.T.L.

(55h) Weekly egg counts of the faeces of a flock of 50 Blackface ewe hogs at pasture showed that helminth egg production reached its peak in the spring and dropped markedly during the summer. This spring rise is attributed to greater egg-laying activity by the worms already present rather than to new infections. Anthelmintic treatment given before or during this peak period should reduce pasture contamination and the worm burden acquired by suckling lambs. Although the ewes were exposed for the intervening 12 months to an extremely heavy source of infection the counts were the same in October 1947 as in October 1946. R.T.L.

(55j) Ogilvie includes in this review succinct accounts of the anthelmintic action of phenothiazine, sodium fluoride, carbon tetrachloride, hexachlorethane, lead arsenate and di-phenthanes. R.T.L.

(55k) Heavy sheep losses from "black disease" are reported from Devon, and evidence has been obtained of its occurrence in Shropshire and north-east England. There is every reason therefore to suspect that this disease has a wide distribution in fluke-infested districts, and its possible presence must be considered in every outbreak of sudden deaths in adult sheep in the autumn and winter. R.T.L.

(55l) This reply to a query on the symptoms, diagnosis and treatment of parasitic aneurysm in horses states that uncomplicated parasitic aneurysm is of little consequence. If accompanied by marked interference with the blood supply of the bowel, resulting in embolism or thrombus formation, treatment is of little avail. R.T.L.

(55m) Commenting on the anonymous answer regarding parasitic aneurysm in horses [see preceding abstract] Tutt gives the opinion that intermittent attacks of diarrhoea and colic are fairly diagnostic in young animals. Faecal examination for eggs of *Strongylus vulgaris* is of little value. R.T.L.

NON-PERIODICAL LITERATURE

56—AFIFI, M. A., 1948.—"Bilharzial cancer. Radiological diagnosis and treatment." London: H. K. Lewis, viii + 111 pp.

(56) In Part I of this monograph Afifi discusses the relationship between bilharziasis and cancer, and the relative incidence of these two diseases in the various organs. Part II deals with the radiological diagnosis of bilharzial cancer of (i) the bladder and (ii) the intestine. Part III describes the treatment of bilharzially associated cancer. The bibliography contains 58 references. R.T.L.

- 57—NATIONAL VETERINARY MEDICAL ASSOCIATION, 1948.—“Handbook on poultry diseases.” 2nd edit., 176 pp.
- 58—UNITED STATES DEPARTMENT OF AGRICULTURE, 1948.—“Index-catalogue of medical and veterinary zoology. Part 10. Authors : M to Mysh.” pp. 2967-3481. Washington, D.C. \$1.50.

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